Journal of
APPLIED POLYMER SCIENCE

CONTENTS

Volume 44

ISSUE NUMBER 1 / JANUARY 5, 1992

Synthesis and Rheological Properties in Aqueous Solution of Poly(Acrylamide-co-Sodium Allylsulfonate
K. Yao and G. Zhuo 1

The Electron Beam-Induced Cationic Polymerization of Epoxy Resins
J. V. Crivello, M. Fan, and D. Bi 9

Permeability of Vitamin B-12 in Chitosan Membranes. Effect of Crosslinking and Blending with Poly(vinyl alcohol) on Permeability
S. Nakatsuka and A. L. Andrady 17

SMA Polymer Thin Film Electrodeposition on Carbon Particles
V. M. Desai, R. Mahalingam, and R. V. Subramanian 29

Processing of Poly(Amide Imides) as Matrices for High-Performance Composites
S. D. Copeland, J. C. Seferis, and M. Carrega 41

Polystyrene Crosslinked with Oligomeric and Polymeric Poly(Dimethyl Siloxane) Derivatives. Thermal and Dynamic Mechanical Studies
H. Tenhu and E.-L. Heino 55

Viscoelasticity of Thin Adhesive Layers as a Function of Cure and Service Temperature Measured by a Novel Technique
R. E. Challis, R. P. Cocker, A. K. Holmes, and T. Alper 65

Application of Computed X-Ray Tomography Scanning in the Study of Thermo-Oxidative Degradation of Thick-Walled Filled Natural Rubber Vulcanizates
H. Lavebratt, E. Östman, S. Persson, and B. Stenberg 83

Crystallization of Linear Polyethylene from Melt in Isothermal Compression
T. Kowalewski and A. Galeski 95

Photocrosslinking Reactions of Polyfunctional Monomers with Vinyl Ether or Propargyl Ether Groups
T. Nishikubo, Y. Hayashi, T. Iizawa, T. Sasaki, T. Matsumoto, and T. Fukudome 107

Accelerated Failure of Bisphenol-A Polysulfone during Electron Beam Irradiation under an Applied Stress
D. J. T. Hill, D. A. Lewis, and J. H. O'Donnell **115**

Electrochemical Polymerization of Acrylonitrile with Quaternary Salts
S. N. Bhadani, Q. Ansari, and S. K. Sen Gupta **121**

A New Carbon Fiber from Lignin
K. Sudo and K. Shimizu **127**

Plasma Polymerization of Organosiloxanes
S. Cai, J. Fang, and X. Yu **135**

Papain Immobilization onto Porous Poly(γ-methyl L-glutamate) Beads
T. Hayashi, C. Hirayama, and M. Iwatsuki **143**

Effect of Particle Size on Mechanical Properties of Epoxy Resin Filled with Angular-Shaped Silica
Y. Nakamura, M. Yamaguchi, M. Okubo, and T. Matsumoto **151**

Thermal Behavior and Cured Products of Fluorine-Containing Bismaleimides
A. Nagai, A. Takahashi, M. Suzuki, and A. Mukoh **159**

Cure Behavior of an Epoxy-Novolac Molding Compound
T. H. Hsieh and A. C. Su **165**

Polymerization of *N*-Vinylcarbazole by Gaseous Initiators
S. N. Bhadani, S. K. Sen Gupta, and A. K. Sinha **173**

NOTES

Degradable Copolymers of Hindered Amine Light Stabilizer Derivatives and Their Stabilizing Efficiency in Polypropylene
Š. Chmela and P. Hrdlovic **177**

A Computer-Aided Experimental Setup for Studying Sorption Kinetics
C. J. Guo, D. De Kee, B. Harrison, and A. Asfour **181**

The Copolymerization of 3-Vinyl Pyridine
D. L. Trumbo **185**

ERRATUM

Fractionation and Characterization of a 1-Butene Linear Low Density Polyethylene
H. Springer, A. Hengse, and G. Hinrichsen **189**

ISSUE NUMBER 2 / JANUARY 15, 1992

Bending-Beam Measurement of Solvent Diffusions in Polyimides: Theoretical and Experimental
J.-H. Jou and L. Hsu **191**

Miscibility of Poly(methoxymethyl Methacrylate) and Poly(methylthiomethyl Methacrylate) with Poly(styrene-co-Acrylonitrile) and Poly (*p*-Methylstyrene-co-Acrylonitrile)
S. H. Goh, S. Y. Lee, and C. L. Leong **199**

Study on Modified Phenolic Resin. II. Modification with *p*-Hydroxyphenylmaleimide/Styrene Copolymer
A. Matsumoto, K. Hasegawa, A. Fukuda, and K. Otsuki **205**

Infrared Photoacoustic and Dynamic Mechanical Spectroscopy of Sheet-Molded Compounds
G. M. Allen, G. L. Wu, and S. A. Prentice **213**

Miscibility Behaviour of Bisphenol-A Polycarbonate and Poly(para-chlorostyrene)
L. H. M. Krings, G. H. Werumeus Buning, and E. Nies **225**

Adhesion Studies of Tyre Cords with Rubber. I. Synthesis and Characterization of Natural Rubber Graft Copolymers
S. H. O. Egboh and A. K. Mukherjee **233**

Effect of Flame-Retardant Treatment on the Mechanical Properties of Some Tropical Timbers
A. N. Eboatu, I. Amanfo, and I. O. Akpabio **239**

Enhanced Enzymolysis of Never-Dried Cotton Fibers Belonging to Different Species
S. P. Bhatawdekar, S. Sreenivasan, R. H. Balasubramanya, and V. Sundaram **243**

Bending of Poly(Vinyl Alcohol)–Poly(Sodium Acrylate) Composite Hydrogel in Electric Fields
T. Shiga, Y. Hirose, A. Okada, T. Kurauchi **249**

Interpenetrating Polymer Networks: High Molecular Weight Natural Rubber and Poly(2,6-Dimethyl-1,4 Phenylene Oxide)
G. G. de Barros, M. W. Huang, and H. L. Frisch **255**

Fabrication Methods for Latex-Based Elastomer Composites Reinforced with Long Discontinuous Fibers
M. Epstein and R. L. Shishoo **263**

The Use of Crossflow to Improve Nonwoven Melt-Blown Fibers
M. W. Milligan, F. Lu, R. R. Buntin, and L. C. Wadsworth **279**

Solid State NMR Investigation of Cationic Polymerized Epoxy Resins
N. Egger, K. Schmidt-Rohr, B. Blümich, W.-D. Domke, and B. Stapp **289**

Application of UV-Curable Diazoresin. II. Characteristics of the Immobilized Glucose Oxidase Membrane
J.-H. Liu, M.-Y. Chen, and Y.-C. Chang **297**

The Effect of Annealing on the Thermal and Dynamic Mechanical Properties of Para-Tetramethyl Xylene Diisocyanate-Based Polyurethanes
G. M. Stack and L. L. Beumel **305**

Surface Modification of UHSPE Fibers through Allylamine Plasma Deposition. I. Infrared and ESCA Study of Allylamine Plasma Formed Polymers
Z.-F. Li and A. N. Netravali **319**

Surface Modification of UHSPE Fibers through Allylamine Plasma Deposition. II. Effect on Fiber and Fiber/Epoxy Interface
Z.-F. Li and A. N. Netravali **333**

Studies on Enzymatic Resistance and Molecular Structure by ^{13}C-NMR of Cellulosic Ethers
A. Martinez-Richa, H. Muñoz-Alarcon, and P. Joseph-Nathan **347**

Tensile Properties of Polypropylene/Kaolin Composites
S. N. Maiti and B. H. Lopez **353**

Effects of Poly(vinyl alcohol) Suspension Medium on Critical Current Density of $Ba_2Y_1Cu_3$ Oxide Superconducting Filaments Produced by Suspension Spinning Method
T. Goto and K. Yamada **361**

NOTES
Ionic Polymeric Peroxycarbamates
Y. Yağci, H. Yildirim, E. Altun, and B. M. Baysal **367**

Compatibility in Blends of Poly(2,6-Dimethyl Phenylene Ether)/Styrene-Acrylonitrile Copolymer
Y. S. Soh **371**

ISSUE NUMBER 3 / JANUARY 25, 1992

Junction Properties of Polypyrrole Containing a Small Amount of Poly(ethylene oxide) with Indium
S. Miyauchi, Y. Hattori, T. Takamatsu, and Y. Sorimachi **377**

A General Equation in Polycondensation
C. Zhou **383**

Environmentally Stable Conductive Polymers from Bis(Ethynylstyryl) Benzene Monomers
T. R. Walton and R. F. Gratz **387**

The Effect of Chloro-Functional Molecules on the Ammonia Plasma Treatment of Silicone Elastomers
S. R. Gaboury and M. W. Urban **401**

Polyether–Polyimide Thermoplastic Elastomers. I. Synthesis and Properties
X. Yu, C. Song, C. Li, and S. L. Cooper **409**

Curing Behavior of Epoxy Resin Having Hydroxymethyl Group
K. Ohashi, K. Hasegawa, A. Fukuda, and K. Uede **419**

Characterization of Linear Low Density Polyethylene by Temperature Rising Elution Fractionation and by Differential Scanning Calorimetry
E. Karbashewski, L. Kale, A. Rudin, W. J. Tchir, D. G. Cook, and J. O. Pronovost **425**

Ultraviolet-Radiation Induced Graft-Copolymerization of Hydroxyethyl Methacrylate onto Cotton Cellulose
S. R. Shukla and A. R. Athalye **435**

Transport Properties in Polypyrrole–PVA Composites: Evidence for Hopping Conduction
M. Makhlouki, M. Morsli, A. Bonnet, A. Conan, A. Pron, and S. Lefrant **443**

Effects of Spinning Conditions on Morphology and Properties of Polyethylene Terephthalate Fibers Spun at High Speeds
G.-Y. Chen, J. A. Cuculo, and P. A. Tucker **447**

Processes of Wood Delignification and Cellulose Mercerization under Conditions of Shear Deformations
N. S. Enikolopian, E. A. Balashova, L. S. Sakhonenko, and S. Z. Rogovina **459**

Novel Effect of Barbituric Acid on Glass Transition Temperature of Bismaleimide–Epoxy Resin Systems
J.-P. Pan, G.-Y. Shiau, and K.-M. Chen **467**

Simulation of Microstructure Development in Injection Molding of Engineering Plastics
J. S. Yu, A. H. Wagner, and D. M. Kalyon **477**

Fracture and Impact Properties of Polycarbonates and MBS Elastomer-Modified Polycarbonates
F.-C. Chang, J.-S. Wu, and L.-H. Chu **491**

An Approach to Yielding and Toughness in Rubber-Modified Thermoplastics
G. Cigna, C. Maestrini, L. Castellani, and P. Lomellini **505**

Carbonization Behavior of Polyimide Films with Various Chemical Structures
M. Inagaki, T. Ibuki, and T. Takeichi **521**

Stability of the Chain Structure of a Styrene–Isoprene Diblock Copolymer during the Hydrogenation by Diimide
J. Podešva, P. Špaček, and Č. Koňák **527**

Phospholipid Liposomes: Preparation, Characterization, and Uses
E. Nordmeier, C. Zeilinger, and M. D. Lechner **533**

Vitrification and Further Structural Relaxation in the Isothermal Curing of an Epoxy Resin
S. Montserrat **545**

Hydrophilic Elastomer Containing Poly(tetrahydrofuran) Segments and Viologen Units
S. Kohjiya, T. Hashimoto, and S. Yamashita **555**

NOTE
A Solution Microbond Method for Determination of the Shear Strength of a Fiber/Thermoplastic Resin Interface
C. K. Moon, H. H. Cho, J. O. Lee, and T. W. Park **561**

ISSUE NUMBER 4 / FEBRUARY 5, 1992

Prediction of the Mechanical Properties of a Crosslinking Polymer from a Combination of the Measured Kinetics and a Model for Network Growth
M. Claybourn and M. Reading **565**

Mechanical and Thermal Behavior of Cotton Cellulose Grafted with Hydroxyethyl Methacrylate Using Photoinitiation
S. R. Shukla, G. V. Gopala Rao, and A. R. Athalye **577**

Study of Curative Interactions in *cis*-1,4-Polyisoprene (IR). V. General Experimental Procedure
F. W. H. Kruger and W. J. McGill **581**

Study of Curative Interactions in *cis*-1,4-Polyisoprene. VI. Interaction of Some Combinations of Sulfur, Tetramethylthiuram Disulfide, and ZnO
F. W. H. Kruger and W. J. McGill **587**

Radiation-Absorbing Hydrogel–Melanin Blends for Ocular Devices
T. V. Chirila, R. L. Cooper, I. J. Constable, and R. Horne **593**

Modification of Poly(Ethylene Ether Carbonate) Polyols by Transesterification
R. F. Harris **605**

Some Observations on Morphology of Anhydride-Modified Polystyrene
S. Chatterjee and M. Biswas **619**

Molecular Mobility in Wool Fibers as Determined from Nuclear Magnetic Resonance Studies
D. Rama Rao and V. B. Gupta **623**

Miscibility of Some Hydroxyl-Containing Polymers with Poly(Acetonyl Methacrylate), Poly(Tetrahydropyranyl-2-methacrylate), and Poly(Cyclohexyl Methacrylate)
Y. F. Chong and S. H. Goh **633**

XPS Study of Radiation Crosslinked Copolymer of Tetrafluoroethylene with Hexafluoropropylene
X. Zhong, J. Sun, F. Wang, and Y. Sun **639**

Structure–Property Relationships for Styrene Crosslinked Polyesters. I. Network Structure and Rubbery Elastic Modulus
V. Bellenger, B. Mortaigne, M. F. Grenier-Loustalot, and J. Verdu **643**

Structure–Property Relationships for Styrene Crosslinked Polyesters. II. Glass Transition Temperature
V. Bellenger, V. Mortaigne, and J. Verdu **653**

Heat Transfer from Moving Fibers in Melt Spinning Process
B. T. F. Chung and V. Iyer **663**

Graft Polymerization of Vinyl Acetate onto Silica
T. Browne, M. Chaimberg, and Y. Cohen **671**

Dielectric Relaxation During Isothermal Curing of Epoxy Resin with an Aromatic Amine
T. Koike **679**

New Class of Cellulose Fiber Spun from the Novel Solution of Cellulose by Wet Spinning Method
T. Yamashiki, T. Matsui, K. Kowsaka, M. Saitoh, K. Okajima, and K. Kamide **691**

Dynamic Mechanical Properties of Polypropylene–Polyamide Blends: Effect of Compatibilization
Z. Liang and H. L. Williams **699**

Crystallization Behavior of High-Density Polyethylene/Linear Low-Density Polyethylene Blend
A. K. Gupta, S. K. Rana, and B. L. Deopura **719**

Synthesis and Properties of Acrylonitrile-EPDM-4-Chlorostyrene Graft Copolymer
D.-J. Park, N.-J. Lee, C.-S. Ha, and W.-J. Cho **727**

The Synthesis of Microgels Composed of Polyelectrolytes
T. Fukutomi, Y. Imori, R. Saito, and K. Shizu **737**

Synthesis and Polymerization of Some Iodine-Containing Monomers for Biomedical Applications
A. Jayakrishnan and B. Chithambara Thanoo **743**

ISSUE NUMBER 5 / FEBRUARY 15, 1992

Swellability of Acrylate Methacrylate–Cellulose Matrix Systems and the Effect on Solute Diffusion Rates
R. S. Okor, U. Iwu-Anyanwu, and A. O. Okhamafe **749**

The Chemical and Physical Properties of Electrochemically Prepared Polyaniline Hexafluorophosphate ($PAPF_6$)
K. M. Choi and K. H. Kim **751**

Electrical Properties of Poly(Butylene Terephthalate)
F. Sandrolini, A. Motori, and A. Saccani **765**

Thermal Studies on Brominated Atactic Polypropylene
A. K. Mukherjee and A. Mohan **773**

Bulk Functionalization of Ethylene–Propylene Copolymers. IV. A Theoretical Approach
R. Greco and P. Musto **781**

Photosynthesis and Application of Polyfunctional Poly(*n*-Butyl Acrylate) Elastomers for Use in Epoxy Resin Toughening
H. -B. Wang, S. -J. Li, and J. -Y. Ye **789**

Physical Properties and Dyeability of Silk Fibers Modified with Ethoxyethylmethacrylate Polymer
M. Tsukada, G. Freddi, M. Matsumura, H. Shiozaki, and N. Kasai **799**

Pultruded Fiber-Reinforced Poly(methyl Methacrylate) Composites. I. Effect of Processing Parameters on Mechanical Properties
C. -C. M. Ma and C. -H. Chen **807**

Pultruded Fiber-Reinforced Poly(methyl Methacrylate) Composites. II. Static and Dynamic Mechanical Properties, Environmental Effect, and Postformability
C. -C. M. Ma and C. -H. Chen **819**

Dynamic Light Scattering and Ultrasonic Investigations during the Cure Reaction of an Epoxy Resin
I. Alig, D. Lellinger, K. Nancke, A. Rizos, and G. Fytas **829**

Kinetic Modeling of Polymerization of Butadiene Using Cobalt-Based Ziegler–Natta Catalyst
S. Nitirahardjo, S. Lee, and J. W. Miller, Jr. **837**

The Interfacial Polycarbonate Reactions. I. Defining the Critical Process Parameters
J. -T. Gu and C. -S. Wang **849**

Functional Polymers for Colloidal Applications. I. Structural Effects of Lipophile-Modified Polyacrylates on Adsorption and Dispersion Ability
P. -L. Kuo, T. -C. Chang, and L. -M. Lu **859**

Functional Polymers for Colloidal Applications. II. Hydrophobic Effects of Polyacrylic Copolymer on Dispersing Polar and Nonpolar Particles
P. -L. Kuo and T. -C. Chang **869**

Polymerization of Acrylamide Initiated with Electrogenerated Cerium (IV) in the Presence of EDTA
A. S. Saraç, C. Erbíl, and A. B. Soydan **877**

Plasma Polymerization of Organoisothiocyanates. I. Characterization of Deposition Process and Deposited Materials
G. Czeremuszkin, A. M. Wróbel, and M. Kryszewski **883**

Plasma Polymerization of Organoisothiocyanates. II. Structure of Polymer Film
G. Czeremuszkin, A. M. Wróbel, and M. Kryszewski **891**

Column Studies on Metal Ion Removal by Dyed Cellulosic Materials
S. R. Shukla and V. D. Sakhardande **903**

Some Recent Studies on Metal/Polyaniline Schottky Devices
S. S. Pandey, S. C. K. Misra, B. D. Malhotra, and S. Chandra **911**

Kinetics of Imidization of Poly(Amic Acid) in Miscible and Immiscible Polymer Blends
S. M. Makhija, E. M. Pearce, and T. K. Kwei **917**

Analysis of Thermal Curves Obtained during Radiation Curing of Polymeric Films
G. Gozzelino, A. Priola, and M. Mantegna **927**

NOTE
Effect of Interface Properties on the Static and Dynamic Properties of Unidirectional Composites
Y. -T. Liao and K. -C. Lee **933**

ISSUE NUMBER 6 / FEBRUARY 25, 1992

Crosslinking of Poly(Vinyl Chloride) with Bismaleic Compound. I. Crosslinking Mechanism
M. Chen and D. Zhou **937**

Crosslinking of Poly(Vinyl Chloride) with Bismaleic Compound. II. Rheological Behavior and Mechanical Properties of Crosslinked PVC
D. Zhou and M. Chen **945**

Infrared Investigations of Sulfonated Ionomer Membranes. I. Water–Alcohol Compositions and Counterions Effects
W. Kujawski, Q. T. Nguyen, and J. Neel **951**

The Determination of the Pore Structural Parameters of Isoporous Resins by Inverse GPC
A. Wang, J. Yan, and R. Xu **959**

The Introduction of Alkyl, Ester, Carboxylate, Amino, Hydroxyl, and Phosphate Functional Groups to the Surface of Polyethylene
S. B. Bentjen, D. A. Nelson, B. J. Tarasevich, and P. C. Rieke **965**

Cellulose Nitrate–Poly(vinyl Chloride-co-Vinyl Acetate)–Polyurethane Ternary IPNs: FT-IR and Morphological Studies
N. Natchimuthu, P. Rajalingam, and G. Radhakrishnan **981**

Spectroscopic Study of Polytoluidines in the UV-Visible and IR Regions
I. Fujita, M. Ishiguchi, H. Shiota, T. Danjō, and K. Kosai **987**

Hydrophilic and Adhesive Properties of Methacrylic Acid-Grafted Polyethylene Plates
K. Yamada, T. Kimura, H. Tsutaya, and M. Hirata **993**

Preparation of Colloidal Silver Using Various Reductants in the Presence of Copolymers of Vinyl Alcohol-*N*-Vinyl Pyrrolidone
K. Esumi, N. Ishizuki, K. Torigoe, H. Nakamura, and K. Meguro **1003**

Alumina–Carbon Composite Fibers from Poly[(acyloxy)aloxane]s
H. Yamane, K. Hashimoto, Y. Kimura, and T. Kitao **1009**

Compression Creep of Molten Low-Density Polyethylene
J. V. Aleman **1017**

Relaxational Behavior of CR-39 Polycarbonate Used as Nuclear Track Detector
J. Vanderschueren, G. Yianakopoulos, J. Niezette, C. Chatry, and J. Gasiot **1027**

Syntheses and Reactions of Urethanes of Cellobiose and Cellulose-Containing Uretdione Groups
L. S. Meyer-Stork, H. Höcker, and H. Berndt **1043**

Injection-Moulded Blends of a Thermotropic Liquid Crystalline Polymer with Polyethylene Terephthalate, Polypropylene, and Polyphenylene Sulfide
J. Seppälä, M. Heino, and C. Kapanen **1051**

Structure–Property Relationship of Modified Polypropylene–Polycaproamide Fiber
I. Grof, M. M. Sain, and O. Durčova **1061**

Living Carbocationic Polymerization of Isobutylene by *tert*-Amyl Alcohol/BCl_3/1-Methyl-2-pyrrolidinone Initiating System
G. Pratap, S. A. Mustafa, W. K. Hollis, and J. P. Heller **1069**

Synthesis of Model Latices for the Study of Coalescence Mechanisms
F. Dobler, T. Pith, Y. Holl, and M. Lambla **1075**

Preparation of Composite Membranes via Interfacial Polyfunctional Condensation for Gas Separation Applications
Y.-T. Chern and L.-W. Chen **1087**

The Enhancement of Microvoids in Acrylic Fibers
J. Qin **1095**

Catalytic Grafting: A New Technique for Polymer–Fiber Composites. I. Polyethylene–Asbestos Composites
Q. Wang, S. Kaliaguine, and A. Ait-Kadi **1107**

NOTE
Questions About Constancy of True Spiral Angle in Cotton
A. V. Moharir **1121**

ISSUE NUMBER 7 / MARCH 5, 1992

Effects on Properties of Varying the *cis/trans* Isomer Distribution in Polyurethane Elastomers Made with 1,4-Cyclohexane Diisocyanate
M. D. Joseph, M. R. Savina, and R. F. Harris **1125**

Study on Ketalization Reaction of Polyvinylalcohol by Ketones. V. The Film Properties of Polyvinylketals Obtained by Aliphatic Ketones
N. Nakamura and K. Suzuki **1135**

Transport Phenomena into and out of Plasticized PVC Sheets: The Influence of Sample History
C. D. Papspyrides **1145**

Kinetics of Silane Grafting and Moisture Crosslinking of Polyethylene and Ethylene Propylene Rubber
A. K. Sen, B. Mukherjee, A. S. Bhattacharyya, P. P. De, and A. K. Bhowmick **1153**

Morphology and Properties of Polyurethane/Poly (Methyl Methacrylate) Interpenetrating Polymer Networks by Co^{60}-γ Ray
G.-C. Wang, H.-W. Cui, B. Fang, and Z.-P. Zhang **1165**

Melt Viscosity and Flow Birefringence of Polycarbonate
T. Nagai, Y. Kimizuka, K. Nito, and J. Seto **1171**

Copolymers of *N*-Vinylcarbazole with Monomers Containing Carboxylic Acid Groups or Carboxylic Anhydride Groups. I
M. Wainwright, J. Griffiths, J. T. Guthrie, A. P. Gates, and D. E. Murray **1179**

Copolymers of *N*-Vinylcarbazole with Monomers Containing Carboxylic Acid Groups or Carboxylic Anhydride Groups. II. Photoconductivity and Composition
M. Wainwright, J. Griffiths, J. T. Guthrie, A. P. Gates, and D. E. Murray **1187**

New Macromolecular Carriers for Drugs. I. Preparation and Characterization of Poly(oxyethylene-*b*-isoprene-*b*-oxyethylene) Block Copolymer Aggregates
A. Rolland, J. O'Mullane, P. Goddard, L. Brookman, and K. Petrak **1195**

Synthesis and Polymerization of Lignin Macromonomers. II. Effects of Lignin Fragments on Methyl Methacrylate Radical Polymerization
C. Da Cunha, A. Deffieux, and M. Fontanille **1205**

Synthesis and Characterization of Ionomeric Poly(vinyl Butyral)
A. M. Dasgupta, D. J. David, and A. Misra **1213**

Solute Migration through Polypropylene Blend Films
D. R. Jenke **1223**

Permeation of Binary–Liquid Mixtures through Elastomers
N. Vahdat, H. Taylor, and A. Alsayegh **1233**

Effect of Molecular Architecture on Microstructural Characteristics in Some Polysiloxaneimide Multiblock Copolymers
J. Samset, K. Mortensen, J. L. Burns, and R. J. Spontak **1245**

Liquid Crystal Polymer-Based Blends: "Universal Grade" Polymers?
F. P. La Mantia, A. Valenza, and P. L. Magagnini **1257**

Triazine Networks Modified with Monofunctional Reactive Cyanate Ester Monomers
K. I. Papathomas and D. W. Wang **1267**

Longitudinal Variation in the Stress–Strain Properties of Wool Fibers
L. A. Dunn and I. L. Weatherall **1275**

Characterization of the Glass Transition Using a Microindenter
F. Rodriguez and T. Long **1281**

Mechanisms of Antioxidant Action: Photoantioxidant Activity of Polymer-Bound Hindered Amines. II. Bis Acrylates
S. Al-Malaika, A. Q. Ibrahim, M. J. Rao, and G. Scott **1287**

Mechanisms of Antioxidant Action: Nature of Transformation Products of Dithiophosphates. II. Antioxidant Action of Thiophosphoryl Disulphides
S. Al-Malaika, M. Coker, P. J. Smith, and G. Scott **1297**

NOTE
New Polymeric Material for Nonlinear Optic Prepared from Chloromethylstyrene
J. P. Monthéard, B. Boinon, A. Zerroukhi, and P. LeBarny **1307**

ISSUE NUMBER 8 / MARCH 15, 1992

Synthetic Resins. XIII. Synthesis and Characterization of the Resins Derived from Quinacetophenone/Substituted Benzoic Acid/Furfuraldehyde
S. P. N. S. Burma, S. Lenka, and P. L. Nayak **1311**

Deformation Processing of PMMA into High-Strength Fibers
C. A. Buckley, E. P. Lautenschlager, and J. L. Gilbert **1321**

The Effect of Fumed Silica upon the Reaction of Iron Octoate and Polysiloxanes
H. Ishida and J. Dunkers **1331**

The Effect of Castor Oil on the Structure and Properties of Polyurethane Elastomers
P. K. Saxena, S. R. Srinivasan, J. Hrouz, and M. Ilavský **1343**

Studies on Curing Urethane Prepolymers with Aniline–Formaldehyde Resins
J. Kozakiewicz, A. Orzechowski, A. Raszczuk, M. H. Jamróz, and J. Cz. Dobrowolski **1349**

Ablation of Poly(2-Hydroxyethyl Methacrylate) by 193-nm Excimer Laser Radiation
T. V. Chirila and P. P. van Saarloos **1355**

Preparation of Negative Photoreactive Polyimide and Its Characterization
Z. Li, P. Zhu, and L. Wang **1365**

Effect of Iron Oxides on the Thermal Degradation of Natural Rubber from *Manihot glaziovii*
G. Gomes de Barros, N. M. Pontes Ricardo, and V. Walmick Vieira **1371**

Modification of Polyethylene by Unsaturated Compounds
N. S. Vijayalakshmi and R. A. N. Murthy **1377**

Synthesis and Study of Some Newer Polyamides for Semipermeable Membrane
J. S. Shukla and S. K. Dixit **1383**

Polymerization of Olefins through Heterogeneous Catalysis X: Modeling of Particle Growth and Morphology
R. A. Hutchinson, C. M. Chen, and W. H. Ray **1389**

Charge Transfer Copolymerization and Properties of Isopropyl Methacrylate with Acrylonitrile and Methacrylonitrile
B. Bixamaiah, P. Raghunath Rao, and E. V. Sundaram **1415**

Study of Cryostructurization of Polymer Systems. IX. Poly(Vinyl Alcohol) Cryogels Filled with Particles of Crosslinked Dextran Gel
V. I. Lozinsky, A. L. Zubov, V. K. Kulakova, E. F. Titova, and S. V. Rogozhin **1423**

Rheology, Composition, and Peel-Mechanism of Block Copolymer–Tackifier-Based Pressure Sensitive Adhesives
N. Nakajima, R. Babrowicz, and E. R. Harrell **1437**

Moisture Sorption on the Wetting Behavior of Poly(*p*-Phenylene Terephthalamide) Fibers in Water and Epoxy Resin
Y.-L. Hsieh, M. M. Hartzell, and G. Barrall **1457**

Toughening Epoxy Resins by Liquid Crystalline Polymers
C. Carfagna, L. Nicolais, E. Amendola, C. Carfagna, Jr., and A. G. Filippov **1465**

Darzen's Glycidic Ester Condensation Reaction on Poly(*N*-Vinyl Pyrrolidone)
R. Devarajan, V. Arunachalam, M. D. K. Kumaraswamy, I. Tajuddin, and T. Joghee **1473**

Preparation and Properties of Rigid Polyurethane Foams Containing Modified Cornstarches
R. L. Cunningham, M. E. Carr, and E. B. Bagley **1477**

Differential Scanning Calorimetric Study of the Interaction of 2,2′-Dibenzothiazole, Sulfur, Zinc Oxide, and Stearic Acid in the Presence of Polyisoprene
A. S. Luyt **1485**

Bead-Spring Macromolecules: The Kinetic Contribution to the Total Stress
S. Grisafi **1491**

ISSUE NUMBER 9 / MARCH 25, 1992

Butadiene–Styrene Copolymerization Initiated by *n*-BuLi/THF/*t*-AmOK
L. Bu and S. Ying **1499**

The Microstructure of Butadiene and Styrene Copolymers Synthesized with *n*-BuLi/THF/*t*-AmOK
L. Bu and S. Ying **1507**

Plasma Modification of Cellulose Derivatives as Biomaterials
F. Poncin-Epaillard, G. Legeay, and J.-C. Brosse **1513**

Analytical Characterization of Weather-Degraded Polyacrylonitrile Fiber
H. E. Howell and A. S. Patil **1523**

Morphology and Mechanical Properties of Fibers from Blends of a Liquid Crystalline Polymer and Poly(ethylene Terephthalate)
J. X. Li, M. S. Silverstein, A. Hiltner, and E. Baer **1531**

Curing Behavior of Epoxy Resin Having Hydroxymethyl Group and Different Molecular Weight Distribution
K. Ohtsuka, K. Hasegawa, A. Fukuda, and K. Uede **1543**

Study on Modified Phenolic Resin. III. Modification with *p*-Hydroxyphenylmaleimide/Acrylic Ester Copolymer
A. Matsumoto, K. Hasegawa, A. Fukuda, and K. Otsuki **1547**

Ultra-High Modulus Isotactic Polypropylene. I. The Influence of Orientation Drawing and Initial Morphology on the Structure and Properties of Oriented Samples
A. O. Baranov and E. V. Prut **1557**

Study on Organosilicon Positive Resist. I. Syntheses and Characterization of Silsesquioxane, Siloxane, and Silmethylene Polymers with Phenolic Hydroxy Groups
H. Sugiyama, T. Inoue, and K. Nate **1573**

Study on Organosilicon Positive Resist. II. Organosilicon Positive Photoresist (OSPR-1334) and Its Application to Bilayer Resist System
H. Sugiyama, A. Mizushima, T. Inoue, and K. Nate **1583**

Study on Organosilicon Positive Resist. III. Organosilicon Positive Excimer Laser Resist (OSPR-2016)
H. Sugiyama, A. Mizushima, and K. Nate **1591**

Determination of Diffusion Coefficient of Oxygen into Polymers by Using Electron Spin Resonance Spectroscopy. II. Poly(vinyl acetate)
Y. Kaptan, Ö. Pekcan, and O. Güven **1595**

Epoxy Resins Based on Aromatic Glycidylamines. V. Shelf Life of TGDDM-Based Epoxy Resins
Š. Podzimek, I. Dobáš, and M. Kubín **1601**

Infrared Spectra of Jute Stick Treated with White-Rot Fungus
A. K. Roy, S. C. Bag, M. K. Basak, and S. K. Sen **1607**

Co-Existence of Ductile, Semi-Ductile, and Brittle Fractures of Polycarbonate
F.-C. Chang and L.-H. Chu **1615**

Melt-Polymerized Aliphatic-Aromatic Copolyamides. I. Melting Points of Nylon 66 Copolymerized with Aromatic Diamines and Terephthalic Acid
K. Kudo, T. Suguie, and M. Hirami **1625**

Determination of the Fiber Content in Polymer Composites by Means of X-Ray Absorption Measurements
C. Schipp, S. Röber, H. G. Zachmann, and J. C. Seferis **1631**

Effects of Types of Fillers on the Molecular Relaxation Characteristics, Dynamic Mechanical, and Physical Properties of Rubber Vulcanizates
N. K. Dutta and D. K. Tripathy **1635**

Polymer Concrete and Polymer Mortar Using Resins Based on Recycled Poly(ethylene Terephthalate)
K. S. Rebeiz, D. W. Fowler, and D. R. Paul **1649**

A Structure Rheological Study of Cellulose Trinitrate in Ethyl Acetate
J. Schurz, M. Marx-Figini, B. Müller, and F. R. Gonzales **1657**

Reactions of Glycerol with Poly(Ethylene Ether Carbonate) Polyols
R. F. Harris and K. M. Lopez **1663**

Grafting of 2-(Dimethylamino) Ethyl Methacrylate onto Gamma Irradiated Polypropylene Fabric
S. M. Gawish, A. Kantouch, A. M. El Naggar, and S. Mosleh **1671**

Polyester Adhesion to Chromium-Coated Steel for Poly(ethylene terephthalate) and Isophthalate Copolymer
H. Yokoya and R. S. Porter **1679**

NOTE
Weatherability of SAN–Copolyester TPE Graft Polyblends
J. C. Falk and J. Van Fleet **1685**

ISSUE NUMBER 10 / APRIL 5, 1992

Swelling Characteristics of Polymer Membranes in the Presence of Aromatic Hydrocarbon Liquids
S. B. Harogoppad, T. M. Aminabhavi, and R. H. Balundgi **1687**

Studies in Optical Properties and Optical Radiation Hardness of Polyorganosiloxanes
J. P. Harmon, T. Jhaveri, J. Gaynor, J. K. Walker, and Z. Chen **1695**

Studies on the Radiation-Induced Graft Copolymerization of Mixtures of *n*-Butyl Acrylate and 2-Hydroxyethyl Methacrylate on Polyurethane. I. Synthesis and Characterization
K. Sreenivasan and K. V. C. Rao **1703**

Kinetic Model for Crosslinking Free Radical Polymerization Including Diffusion Limitations
G. L. Batch and C. W. Macosko **1711**

Specific Volume of Molten Thermoplastic Polymer Composite at High Pressure
Y. Z. Wang, W. J. Chia, K. H. Hsieh, and H. C. Tseng **1731**

Grafting of Poly(ethylene Terephthalate) Fibers with Methacrylic Acid Using Benzoyl Peroxide
M. Saçak, F. Sertkaya, and M. Talu **1737**

Concentration-Dependent Diffusion of Dye in Reactive Dyeing Systems
S. H. Lin **1743**

Preparation and Characterization of High Molecular Weight Poly(hydroxy ethers) with Unusually High Glass Transition Temperatures
H. C. Silvis, J. E. White, and S. P. Crain **1751**

Multiobjective Dynamic Optimization of Batch Free Radical Polymerization Process Catalyzed by Mixed Initiator Systems
D. N. Butala, W. R. Liang, and K. Y. Choi **1759**

Visible Laser Lights in Photoinduced Polymerization. VI. Thioxanthones and Ketocoumarins as Photoinitiators
J. P. Fouassier and S. K. Wu **1779**

Volatile Compounds Extracted from Polypropylene Pellets by Hot Water: Influence of the Level of the Peroxide Agent
P. Rebeyrolle and P. Etiévant **1787**

Effects of Curing Accelerators on Physical Properties of Epoxy Molding Compound (EMC)
M. Ogata, N. Kinjo, S. Eguchi, H. Hozoji, T. Kawata, and H. Sashima **1795**

The Curing Mechanism and Properties of Bismaleimide–Biscyanamide Resin
M. Suzuki, A. Nagai, M. Suzuki, and A. Takahashi **1807**

Copolyimides Using 3-Phenyl Tricyclo[6,2,2,$0^{2,7}$]Dodeca-2,11-ENE-5,6,9,10-Tetracarboxylic Dianhydride as a Thermosetting Functional Group: Preparation, Characterization, and Thermal Curing Chemistry
C.-Y. Su and Y.-D. Lee **1815**

Controlled Release of Riboflavin and Insulin through Crosslinked Poly(vinyl Alcohol)/Chitosan Blend Membrane
J. H. Kim, J. Y. Kim, Y. M. Lee, and K. Y. Kim **1823**

On the Synthesis of Ethyl-2-Cyanoacrylate from Waste Residue
Z. Z. Denchev and V. S. Kabaivanov **1829**

Adsorption of Anionic Surfactants and Related Compounds from Aqueous Solution onto Activated Carbon and Synthetic Adsorbent
Y. Ihara **1837**

Graft Characteristics and Solution Properties of Natural Rubber-*g*-Methyl Methacrylate Copolymer in MEK/Toluene
M. E. Enyiegbulam and I. U. Aloka **1841**

Chemical Interaction Between Epoxidized Natural Rubber and Silica: Studies on Cure Characteristics and Low-Temperature Dynamic Mechanical Properties
S. Varughese and D. K. Tripathy **1847**

Analysis of Plasma Polymerization of Benzaldehyde
Q. Zhao, Y. Zhu, Y. Xu, Y. Yao, and X. Liu **1853**

Organotin Polymers. XV. Azeotropy in Terpolymerization Reactions of Tributyltin Acrylate or Methacrylate with Itaconic Acid or Dimethylitaconate and Acrylonitrile
A. A. Mahmoud, A. F. Shaaban, M. M. Azab, and N. N. Messiha **1861**

NOTE
Effects of Molecular Weight on Mechanical Properties of Polypropylene
T. Ogawa **1869**

ISSUE NUMBER 11 / APRIL 15, 1992

Cathodically Electrodepositable Novel Coating System from Castor Oil
J. Laxmikanth Rao, R. S. Balakrishna, and M. M. Shirsalkar **1873**

Synthesis and Structure–Property Relationships of a New Class of Rubber-Toughened PMMA
P. Laurienzo, M. Malinconico, E. Martuscelli, G. Ragosta, and M. G. Volpe **1883**

Peroxide-Initiated Grafting of Acrylamide on to Polyethylene Surfaces
K. Kildal, K. Olafsen, and A. Stori **1893**

On the Deformational Characteristics of Porous Polymeric Tubes
M. A. Islam, S. Malamusis, and I. Mladenov **1899**

Evaluation of Cure Conditions for Polyimide Thin Films by Pyrolysis–Mass Spectrometry
E. T. Johnson **1905**

The Correlation between X-Ray Orientation Parameters and Strength of Fibers in Native Cotton
A. V. Moharir, J. Louwagie, L. Van Langenhove, and P. Kiekens **1913**

Effect of Coupling Agents on the Mechanical Properties of Mica/Epoxy and Glass Fiber/Mica/Epoxy Composites
P. Bajaj, N. K. Jha, and R. A. Kumar **1921**

Dielectric Analysis of Cellulose and Its Vinylic Copolymers
C. Flaqué and S. Montserrat **1931**

Maleation of Linear Low-Density Polyethylene by Reactive Processing
N. C. Gaylord, R. Mehta, D. R. Mohan, and V. Kumar **1941**

Plasma Polymerization of Allylamine/3-Aminopropyltriethoxysilane Mixtures: Surface Nitrogen Control
V. Barbarossa, S. Contarini, and A. Zanobi **1951**

Reverse Osmosis Separation of Binary Organic Mixtures Using Cellulose Acetate Butyrate and Aromatic Polyamide Membranes
Y. Fang, S. Sourirrajan, and T. Matsuura **1959**

Polymer Compatibility and Biodegradation of Starch–Poly(ethylene-*co*-acrylic acid)-Polyethylene Blends
R. L. Shogren, A. R. Thompson, F. C. Felker, R. E. Harry-O'Kuru, S. H. Gordon, R. V. Greene, and J. M. Gould **1971**

Pyrolysis Kinetics of Highly Crosslinked Polymethylsiloxane by TGA
D. Li and S.-T. Hwang **1979**

Crystallization of Fiber-Reinforced Poly(phenylene Sulfide) Composites. I. Experimental Studies of Crystallization Rates and Morphology
G. P. Desio and L. Rebenfeld **1989**

Studies of Functionalized Polystyrene-Poly(2,6-Diphenyl-1,4-Phenylene Oxide) Blends
D. T. Hseih and D. G. Peiffer **2003**

Permeation and Separation Characteristics of Alcohol–Water Mixtures through Poly (dimethyl Siloxane) Membrane by Pervaporation and Evopomeation
T. Uragami and T. Morikawa **2009**

Stereoselective Modification of Poly(vinyl Chloride) in a Twin Screw Extruder
C. Mijangos, P. Cassagnau, and A. Michel **2019**

Influence of Molecular Weight on the Thermal and Mechanical Properties of Polyurethane Elastomers Based on 4, 4′-Diisocyanato Dicyclohexylmethane
H. F. Hespe, A. Zembrod, F. J. Cama, C. W. Lantman, and S. D. Seneker **2029**

Starch–Poly(ethylene-*co*-Acrylic Acid) Composite Films. Effect of Processing Conditions on Morphology and Properties
G. F. Fanta, C. L. Swanson, and R. L. Shogren **2037**

Rheology of HTPB Propellant. I. Effect of Solid Loading, Oxidizer Particle Size, and Aluminum Content
Rm. Muthiah, V. N. Krishnamurthy, and B. R. Gupta **2043**

Phase Equilibria of Modified Ethylene Glycol–Maleic Anhydride–Phtalic Anhydride Polyester Resins
J. Hyršl, Š. Podzimek, and J. Eichler **2053**

ISSUE NUMBER 12 / APRIL 25, 1992

Synthesis of Macromolecular Coupling Agents and Binders
A. Crespy, C. Caze, and C. Loucheux **2061**

Damage Evolution in Flexible Polyurethane Foams
C. Kau, L. Huber, A. Hiltner, and E. Baer **2069**

Hard Elastic Behavior in Polyurethane Foams
C. Kau, L. Huber, A. Hiltner, and E. Baer **2081**

Structural Features of Native Cellulose Gels and Films from Their Susceptibility to Enzymic Attack
P. L. Beltrame, E. D. Paglia, A. Seves, E. Pellizzoni, and M. Romanò **2095**

Photoconductivity of Poly((E,E)-[6.2]paracyclophane-1,5-diene) and Its Complex with TCNE
J. Ulański, J. Kubacki, I. Głowacki, M. Kryszewski, and D. T. Glatzhofer **2103**

Effect of Latex Concentration on Epoxidation of Natural Rubber (NR) Latex
S. P. Vernekar, M. B. Sabne, S. D. Patil, A. S. Patil, S. B. Idage, C. V. Avadhani, and S. Sivaram **2107**

Dynamic Light-Scattering Studies of Poly(γ-benzyl α,l-glutamate)–Benzyl Alcohol System
P. Shukla, M. Muthukumar, and K. H. Langley **2115**

Transport Properties of Dichloromethane in Glassy Polymers. I. Atactic Polystyrene Films
V. Vittoria and A. Ruvolo Filho **2127**

Chemical Modification of Dialysis Membrane Based on Poly(Acrylonitrile–Methylmethacrylate–Sodium Vinylsulphonate)
Z. Godjevargova, A. Dimov, and St. Petrov **2139**

Prostaglandin E_1-Immobilized Poly(Vinyl Alcohol)-Blended Chitosan Membranes: Blood Compatibility and Permeability Properties
T. Chandy and C. P. Sharma **2145**

Invariant Kinetic Parameters of Polymer Thermolysis. IV. Influence of Fire-Retardant Additives on Polypropylene Thermolysis
S. V. Vyazovkin, V. V. Bogdanova, I. A. Klimovtsova, and A. I. Lesnikovich **2157**

Crystal Size and Distribution Parameter of Natural Pure Mysore Silk Fibers (*Bombyx Mori*)
R. Somashekar, R. Gopalkrishna Urs, and M. S. Madhava **2161**

***In Situ* Compatibilization of Polystyrene/Polyethylene Blends using Amino-Methacrylate-Grafted Polyethylene**
Z. Song and Warren E. Baker **2167**

Chemical and Mechanical Properties of Methyl Methacrylate-Grafted Wool Fiber
V. J. Elangovan and S. Saccubai **2179**

Extruded Blends of a Thermotropic Liquid Crystalline Polymer with Polyethylene Terephthalate, Polypropylene, and Polyphenylene Sulfide
M. T. Heino and J. V. Seppälä **2185**

Molecular Weight Distribution of the Methyl Methacrylate (MMA) Polymer Separated from the MMA-Grafted Silk Fiber
M. Tsukada, Y. Goto, G. Freddi, T. Yamamoto, and N. Nakabayashi **2197**

Structure and Physical Properties of Epoxide-Treated Tussah Silk Fibers
M. Tsukada, Y. Goto, G. Freddi, M. Matsumura, H. Shiozaki, and H. Ishikawa **2203**

Effect of Methanol on Optical Property of Irradiated Poly(Methyl Methacrylate)
C. B. Lin and S. Lee **2213**

Morphology and Properties of HDPE/Zinc-Neutralized Sulfonated EPDM Blends
X. Xu, X. Zeng, and H. Li **2225**

Single-Phase Blends of Polycarbonate and Poly(Phenyl Methacrylate)
T. Kyu, D. Park, and W. Cho **2233**

Volume Title Page **2239**

Subject Index to Volume 44 **2241**

Volume Contents for Volume 44 **2247**

Author Index to Volume 44 **2265**